CLAIMS

1. A semiconductor laser gyro comprising a photodetector and a semiconductor laser that emits first and second laser lights,

wherein the photodetector is disposed in a position where an interference fringe is formed by the first and second laser lights,

the semiconductor laser includes an active layer as well as first and second electrodes for injecting a carrier into the active layer,

the first laser light is one obtained through emission of a part of laser light (L1) that circulates on a polygonal path in the active layer, and

the second laser light is one obtained through emission of a part of laser light (L2) that circulates on the polygonal path in an opposite direction to the laser light (L1).

2. The semiconductor laser gyro according to claim 1, wherein the active layer has a planar shape that is not ring-shaped.

3. The semiconductor laser gyro according to claim 2, wherein the polygonal path is a rhombic path, and

the active layer has first to fourth end faces that are formed in positions corresponding to first to fourth corners of the rhombic path.

4. The semiconductor laser gyro according to claim 3, wherein at least one electrode selected from the first and second electrodes and a semiconductor layer of the semiconductor laser are in contact with each other along the rhombic path.

5. The semiconductor laser gyro according to claim 3, wherein internal angles of the first and second corners that oppose each other on the rhombic path are smaller than internal angles of the third and fourth corners, and

both the first and second laser lights are emitted from the first end face that is formed in a position corresponding to the first corner.

6. The semiconductor laser gyro according to claim 5, wherein a diagonal line extending between the first corner and the second corner is not parallel with the first and second lasers.

7. The semiconductor laser gyro according to claim 5, wherein the active layer satisfies a condition under which the laser light (L1) and the laser light (L2) are reflected totally by the third and fourth end faces.

8. The semiconductor laser gyro according to claim 5, wherein the first and second end faces are convex surfaces that curve outwards, respectively.

9. The semiconductor laser gyro according to claim 8, wherein the active layer includes a first region including the rhombic path and a second region that adjoins the first region, and

the first region has a planar shape that is a rectangular shape whose shorter sides are convex surfaces that curve outwards.

10. The semiconductor laser gyro according to claim 9, wherein the planar shape of the active layer that is formed of the first region and the second region is substantially the shape of a letter H.

11. The semiconductor laser gyro according to claim 10, wherein a formula of $L/4 < Ls$ holds, where Ls denotes a length (μm) of the second region in a direction parallel to a diagonal line extending between the first corner and the second corner, while L indicates a distance (μm) between the first corner and the second corner.

12. The semiconductor laser gyro according to claim 3, wherein the photodetector includes a plurality of light-sensitive elements.

13. The semiconductor laser gyro according to claim 3, wherein the semiconductor laser and the photodetector are formed monolithically.

14. The semiconductor laser gyro according to claim 13, wherein the semiconductor laser and the photodetector have the same layered structure.

15. The semiconductor laser gyro according to claim 3, further comprising a lens,

wherein the photodetector is disposed in a position where an interference fringe is formed by the first and second laser lights that have passed through the lens.

16. The semiconductor laser gyro according to claim 15, wherein the semiconductor laser and the lens are formed monolithically.

17. The semiconductor laser gyro according to claim 16, wherein a semiconductor layer of the semiconductor laser and the lens have the same layered structure.

18. The semiconductor laser gyro according to claim 3, further comprising a prism,

wherein the photodetector is disposed in a position where an interference fringe is formed by the first and second laser lights that have passed through the prism.

19. The semiconductor laser gyro according to claim 18, wherein the semiconductor laser and the prism are formed monolithically.

20. The semiconductor laser gyro according to claim 19, wherein a semiconductor layer of the semiconductor laser and the prism have the same layered structure.

21. The semiconductor laser gyro according to claim 18, wherein the semiconductor laser, the prism, and the photodetector are formed monolithically.

22. The semiconductor laser gyro according to claim 21, wherein a semiconductor layer of the semiconductor laser, the prism, and a semiconductor layer of the photodetector have the same layered structure.